

IN THE DRAWINGS

The attached sheet of drawings includes changes to Fig. 15. This sheet, which includes Fig. 15, replaces the original sheet including Fig. 15.

Attachment: Replacement Sheet

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following remarks is respectfully requested.

Claims 1-6, 8-18, 20-31, 33-44, 46-57, 59-70 and 72-76 are active in this application, Claims 7, 19, 32, 45, 58 and 71 canceled and Claims 1, 13, 25, 38, 51 and 64 having been amended by the present Amendment.

In the outstanding Office Action the drawings were objected to as requiring correction, Claims 1 and 13 were rejected under 35 USC §103(a) as being unpatentable over Tanagawa (U.S. Patent Number 5,117,380), Claims 25 and 38 were rejected under 35 USC §103(a) as being unpatentable over Tanagawa, and further in view of Domenik et al (U.S. Patent Number 4,694,412), Claims 51 and 64 were rejected under 35 USC §103(a) as being unpatentable over Tanagawa, and further in view of Maeda et al (U.S. Patent Number 6,611,907) and Domenik et al, Claims 2-5, 10, 12, 14-17, 22 and 24 were rejected under 35 USC §103(a) as being unpatentable over Tanagawa, Claims 6, 11, 18, 23, 26-31, 35-37, 39-44 and 48-50 were rejected under 35 USC §103(a) as being unpatentable over Tanagawa, and further in view of Domenik et al, Claims 7-9 and 19-21 were rejected under 35 USC §103(a) as being unpatentable over Tanagawa, and further in view of Hoffman (U.S. Patent Number 5,706,218), Claims 32-34 and 45-47 were rejected under 35 USC §103(a) as being unpatentable over Tanagawa and Domenik et al, and further in view of Hoffman, Claims 52-57, 61-63, 65-70, and 74-76 were rejected under 35 USC §103(a) as being unpatentable over Tanagawa, and further in view of Maeda et al and Domenik et al and Claims 58-60 and 71-73 were rejected under 35 USC §103(a) as being unpatentable over Tanagawa, Maeda et al and Domenik et al, and further in view of Hoffman.

In response to the objection to the drawings, FIG. 15 has been amended to correct the noted informality and submitted herewith is a replacement page for FIG. 15. Accordingly, it is respectfully submitted that the objection to the drawings has been overcome.

In light of the several grounds for rejection on the merits, independent Claims 1, 13, 25, 38, 51 and 64 to include the feature recited Claims 7, 19, 32, 45, 58 and 71, respectively, and the latter claims have therefore been canceled. No new matter has been added

As is now evident in the amended independent claims, the claimed invention invention includes a voltage-controlled oscillator having an external terminal, the oscillator and the external terminal are electrically disconnected before a count value is output, and the oscillator and the external terminal are electrically connected after the count value is output. In other words, according to the claimed invention, the oscillator and the external terminal are electrically disconnected while a random number's seed is generated (before the count value is output). By virtue of this feature, during a random number's seed generation, the oscillator is prevented from being controlled from the external terminal so that data is protected from a malicious analyzer.¹

None of the cited prior art, i.e., none of Tanagawa, Domenic et al., Maeda et al., and Hoffman, disclose the above-mentioned feature. The outstanding Official Action relies on Hoffman as obviating this feature, stating, for example,

... Hoffman teaches wherein said oscillator is a voltage-controlled oscillator having an external terminal, said oscillator and external terminal are electrically disconnected before the count value is output, and said oscillator and external terminal are electrically connected after the count value is output (columns 1-4, figures 1, 3). ...²

However, Hoffman merely teaches voltage controlled oscillator (VCO) 10 driven by amplifier 11 and driving plural ring oscillators 25-30, in which the amplifier 11 and VCO 10

¹ See the specification, page 22, line 16 to page 28, line 9, particularly page 26, line 4 to page 27, line 15 for discussion of this feature.

² See, e.g., Official Action, page 13, last line to page 14, line 4.

“receive an enable signal on line 20 so that these devices may be powered down when not in use.”³ Hoffman provides no teaching regarding “said oscillator and external terminal are electrically disconnected before the count value is output, and said oscillator and external terminal are electrically connected after the count value is output,” as recited in Applicants’ pending amended claims. It is respectfully submitted that this deficiency is not remedied by the other cited references. When the deficiencies in the cited art are further considered in view of the fact that the object of each cited reference is different from that of the claimed invention that is to protect data from a malicious analyzer, and in view of the different objects of the cited references, it is respectfully submitted that the amended independent claims clearly patentably define over the cited art.

Applicants further point out that according to a further feature of the claimed invention, as addressed in Claims 9, 21, 34, 47, 60 and 73, after a random number's seed is determined, the clock generated from the oscillator is used as a system clock which is to operate the system. This structure prevents the frequency of the clock from being extremely heightened so that data can be protected from a malicious analyzer. It is respectfully submitted that the cited references do not disclose this feature either.

Thus, for the reasons stated above, Applicants respectfully submit that the claimed invention is not rendered obvious by the cited references, and accordingly reconsideration and withdrawal of the outstanding grounds for rejection on the merits is believed to be in order and is respectfully requested.

Consequently, in view of the present amendment and in light of the above discussion, no further issues are believed to be outstanding, and the present application is believed to be

³ Hoffman, column 2, lines 24-26.

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in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Eckhard H. Kuesters
Attorney of Record
Registration No. 28,870

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 06/04)

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